

### **REMARKS**

Claims 66-99 and 134 were previously pending with claims 69, 70, and 74-87 being withdrawn as reading on a non-elected species. By this response, Applicant amends claims 66 -70, 71, 78, and 134 and adds new claims 135 and 136. As a result, claims 66-68, 71-73, 88-99, and 134-136 are pending for examination with claims 66 and 134 being independent claims. Claims 69, 70, and 74-87, although withdrawn, are expected to be allowed upon the allowance of a claim from which they depend. No new matter is added.

#### **I. Interview**

Initially, Applicant's representative Walt Norfleet thanks the Examiner for the courtesies extended during a telephone interview regarding the Office Action of December 13, 2007. During the interview, the applied references and the subject matter of claims 66 and 134 were discussed. It was also pointed out that much of the support for the pending claims of the present application may be found in Figs. 9-15 and the text between paragraphs [0093] and [0134], as numbered in corresponding published application US 2004/0235014. Comments made during the interview are summarized throughout the remarks herein.

#### **II. Rejections Under 35 USC §102 Are Overcome**

Claims 66-68, 71-73, 88-99, and 134 stand rejected under 35 USC 102(e) as being anticipated by Chan (US 6355420). Claims 66-68, 71-73, 88-99, and 134 also stand rejected under 35 USC 102(e) as being anticipated by Gilmanshin (US 6263286).

Claim 66 is amended to recite moving the polymer through the detection zone at a velocity while establishing the timing event. The amendments to claim 66 also clarify that any count of emissions received by the detector is reset when the timing event is established. Additionally, claim 66 is broadened by moving some aspects of claim 66 into new claim 136. Claims depending from claim 66 are also amended in a manner consistent with the changes to claim 66 and the language of new claim 136. Independent claim 134 is amended in a manner consistent with the amendments to claim 66.

As discussed during the interview, Chan discloses measuring the length of time that elapses between detection of a first signal (i.e., from the label of a first unit specific marker) and a second signal (i.e., from the label of a second unit specific marker), as is discussed generally at column 8, lines 40-48. This may include measuring time that elapses between various labels being present in a detection zone. However, there is no teaching or suggestion in Chan of determining a proportion of the first (or second) emission signal that corresponds to a distance of the detection zone traversed by the label of the first (or second) unit specific marker at the timing event, as recited by claim 66 and 134. This much was conceded during the interview, at least with respect to the explicit disclosure of Chan.

Gilmanshin discloses measuring the distance between two or more units of unit-specific makers in the same molecule (col. 14, lines 33-35). Gilmanshin also relates to techniques that use an autocorrelation function to extract repetitive information from raw data, such as object dependent impulses that are emitted from similar objects. (See generally, col. 7, lines 19-31). However, nowhere does Gilmanshin teach or suggest determining a proportion of the first (or second) emission signal that corresponds to a distance of the detection zone traversed by the label of the first (or second) unit specific marker at the timing event, as recited in claim 66 and 134. This much was also conceded during the interview with respect to the explicit disclosure of Gilmanshin.

It was suggested, during the interview, that the above discussed aspects of claims 66 and 134, while not explicitly present, are inherent in each of Chan and Gilmanshin. Specifically, the it was indicated that emission signals of labels that pass through a detection zone with a Gaussian intensity distribution may themselves have intensities that peak when a label is in a central portion of the detection zone, such as is described in paragraph 0086 of the present application. It was further suggested that one could analyze an emission signal for such a peak, arbitrarily superimposing a timing event onto the emission signal at the peak, and then determining that the peak / timing event is associated with the label being present in a central portion of a detection zone. Applicant respectfully points out that this above scenario is not necessarily present in the disclosures of either Chan or Gilmanshin, as is required to establish inherency. (See MPEP 2112(IV), relating to inherency, copied below for reference).

To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient. (MPEP 2112(IV))

Chan does mention measuring the length of time elapsed between detection of a first signal from the first unit and a second signal from a second unit. (See generally, col. 8, lines 39-43) Similarly, Gilmanshin mentions determining the distance between two or more units in the same molecule. (See generally col. 14, lines 34-37). Applicant respectfully points out, however, that in either Chan or Gilmanshin, this may simply involve measuring the length of time that passes between the first and second units initially being detected in a detection zone. Other scenarios are also possible. Even if analyzing the signal for a peak is possible, as suggested by the Examiner, it is not necessarily present in Chan, such that inherency is not established.

Claims 66 and 134 also patentably distinguish the scenario suggested during the interview, which, as understood by the Applicant, includes arbitrarily superimposing a timing event onto an emission signal at the peak to determine that the peak / timing event is associated with the label being at the center of the detection zone. Claims 66 and 134 now recite moving the polymer through the detection zone at a velocity while establishing the timing event, any count of emissions collected from the detection zone being reset upon the establishment of the timing event. In this respect, each of claims 66 and 134 now clarify that the timing event is not an event that may be superimposed, after the fact, onto the peak of an emission signal to determine when a label is positioned in a central portion of a detection zone. Instead, timing events are established while a polymer is moving through a detection zone and without *a priori* knowledge of a position of the polymer within the detection zone, contrary to the scenario suggested during the interview.

For at least the above reasons the rejection of claims 66-68, 71-73, 88-99, and 134 over Chan and Gilmanshin are overcome. Accordingly, withdrawal of these rejections is respectfully requested.

III. Non-Statutory Obviousness-Type Double Patenting Rejections Are Overcome

Claims 66 and 134 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 3 of Gilmanshin. For similar reasons discussed above, Applicant respectfully asserts that each of claims 66 and 134 patentably distinguish Gilmanshin, such that this rejection is overcome. Accordingly, withdrawal of this rejection is respectfully requested.

IV. Rejections Under 35 USC 102(f) Are Overcome

Claims 66-68, 71-73, 88-99, and 134 stand rejected under 35 USC 102(f) in view of Gilmanshin. For at least the same reasons discussed above with respect to the rejections under 35 USC 102(e), these rejection are overcome. Accordingly, withdrawal of these rejection is respectfully requested.

**CONCLUSION**

In view of the foregoing remarks, this Application should now be in condition for allowance. A notice to this effect is respectfully requested. If the Examiner believes, after this Response, that the application is not in condition for Allowance, the Examiner is requested to call the undersigned attorney or agent at the telephone number listed below.

If this response is not considered timely filed, and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an Extension fee that is not covered by an enclosed check, please charge any deficiency to Deposit Account No. 23/2825.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated:

13 - June - 2008

Respectfully submitted,

By

Walt Norfleet

Registration No.: 52,078

WOLF, GREENFIELD & SACKS, P.C.

Federal Reserve Plaza

600 Atlantic Avenue

Boston, Massachusetts 02210-2206

(617) 646-8000